HEALTHY FOOD INCENTIVE DESIGN

Prepared by Peter Relich for SPUR
Version 0.5
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Table 1: Version Control

Version	Date	Document Change	Responsible Party
V 0.1	01/05/2018	Initial Draft	Peter Relich
V 0.2	01/17/2018	Updated based upon comments	Peter Relich
V 0.3	1/26/2018	Updated based upon additional comments	Peter Relich
V 0.4	2/12/2018	Updated based upon additional comments	Peter Relich
V 0.5	2/19/2018	Added farmers' market bonus dollars in Appendix 2	Peter Relich

Acronyms and Terms

Table 2: Acronyms and Terms

Acronym/Term	Definition
CFAP	California Food Assistance Program
EBT	Electronic Benefits Transfer
FIFO	First-in, first-out
FIS	Fidelity National Information Services
FNS	Food and Nutrition Services
HFI	Healthy Food Incentive
HIP	Healthy Incentive Pilot
IVR	Interactive Voice Response
MIS	Management Information System
PM	Project Management or Project Manager
POS	Point of Sale
SARS	Statewide Automated Reconciliation System - a computer system operated by the EBT Project for the reconciliation of EBT transactions and settlement.
SNAP	Supplemental Nutrition Assistance Program
SPUR	San Francisco Bay Area Planning and Urban Research Association
TBD	To be determined
TPP	Third Party Processor
UAT	User Acceptance Test
UPC	Universal Product Code
USDA	United States Department of Agriculture
WINS	Work Incentive Nutritional Supplement

1 Executive Summary

SPUR, the San Francisco Bay Area Planning and Urban Research Association, is researching alternatives for a program to incentivize participants in the CalFresh program (SNAP program in California) to purchase California grown fresh fruits and vegetables. SPUR is looking at an incentive program similar to the Healthy Incentive Pilot (HIP) program implemented in Massachusetts. In this alternative, CalFresh recipients receive a bonus benefit amount in their SNAP account based upon the amount of California grown fresh fruits and vegetables purchased by the recipient. The bonus amount is added to their available benefit balance in the recipient's SNAP account, and can be used to purchase any SNAP eligible food items.

SPUR has contracted with Peter Relich for a study to provide:

- Document detailing the technical specifications for implementing a program that integrates fruit and vegetable supplemental benefits (aka healthy food incentives or HFI) with the CalFresh program on the EBT card.
- High-level estimates for implementation of the program.
- An analysis and discussion of replicability with other States that have contracts with FIS for SNAP EBT services

This document provides the results of the study commissioned by SPUR and undertaken by Peter Relich of Peter Relich Consulting Inc. Mr. Relich has 34 years of experience providing system design, development, implementation, and operational support to public and private sector entities. Peter has worked primarily in consulting, software development and operational support roles for electronic payment system applications, including bank credit (VISA and MasterCard) and debit card applications, and Electronic Benefits Transfer (EBT) for both SNAP and WIC benefits. For the past 19 years, Mr. Relich has been consulting to both public and private entities on the design, development, and implementation of EBT systems for the delivery of SNAP, cash, and WIC benefits. Mr. Relich has undertaken and participated in a number of industry endeavors and task forces, including being Chairperson for the American National Standards Institute (ANSI) Accredited Standards Committee X9 Financial Industry Standards Inc. (X9) working group that developed both the technical specifications for transacting both SNAP/cash and WIC EBT transactions.

The conclusions of the report are that an alternative for the incentive program that is based upon the work performed by Massachusetts for its Healthy Incentive Pilot (HIP) project is feasible and will work for California.

2 Technical Specifications

Regardless of the alternative selected for implementation, there are three different system components within the EBT ecosystem that would have to be modified to support a fresh fruits and vegetables incentive program for California. These three system components are: 1) the EBT system; 2) Retailer systems; and 3) State backend systems receiving information from the EBT System (note that this does not include the State eligibility systems). California has contracted with Fidelity National Information Services (FIS) for SNAP EBT services. Consequently FIS would need to modify their system to support any type of fresh fruits and vegetables incentive program for California.

In the following sections, a description of the transaction flows for transaction approval and transaction settlement is provided. These transaction flows provide the system environment in which the HFI program would have to fit. Following the transaction flows is a description of the anticipated changes to the EBT system, Retailer systems, and State backend systems for the selected alternative.

2.1 EBT Transaction Flows

Within an EBT System, there are two types of transactions flows to be concerned about. The first is the online transaction flow, which is the processing and approval of purchase requests by the EBT cardholder. The *Figure 1: EBT Online Transaction Flow* diagram below provides a pictorial representation on how transactions flow within the EBT environment.

The EBT Host System is considered to be the card issuer, and as such, is the master of EBT account information, including the available account balance. The MIS is responsible for establishing the EBT account, and providing SNAP benefits authorized for the household. However, once benefit data has come over to the EBT System and been applied to the EBT account, the MIS is no longer involved with the benefit. An analogy that can be used is a payroll deposit to an employee's bank account. Once the payroll deposit has been made available to the employee, the employer and its bank is no longer involved.

In the FIS EBT processing environment, all retailer transactions are funneled through a transaction Gateway, sometimes referred to as the EBT Gateway. Use of the Gateway simplifies the processing environment and support interoperability between the States. A retailer or its Acquirer/TPP can send an EBT transaction to the Gateway, and know that it will get routed to the corrected EBT System for the respective State. Without a Gateway, a retailer or its Acquirer/TPP would have to connect to all 50 State EBT Systems.

Within the EBT System, processing rules can be defined to support incentive payments to the cardholder based upon desired cardholder behavior, such as the purchase of California grown fruits and vegetables. The creation of incentive benefits can occur within the EBT Host System without any interaction with the MIS. This allows an EBT System the ability to implement an incentive program without requiring modifications to the State's MIS.
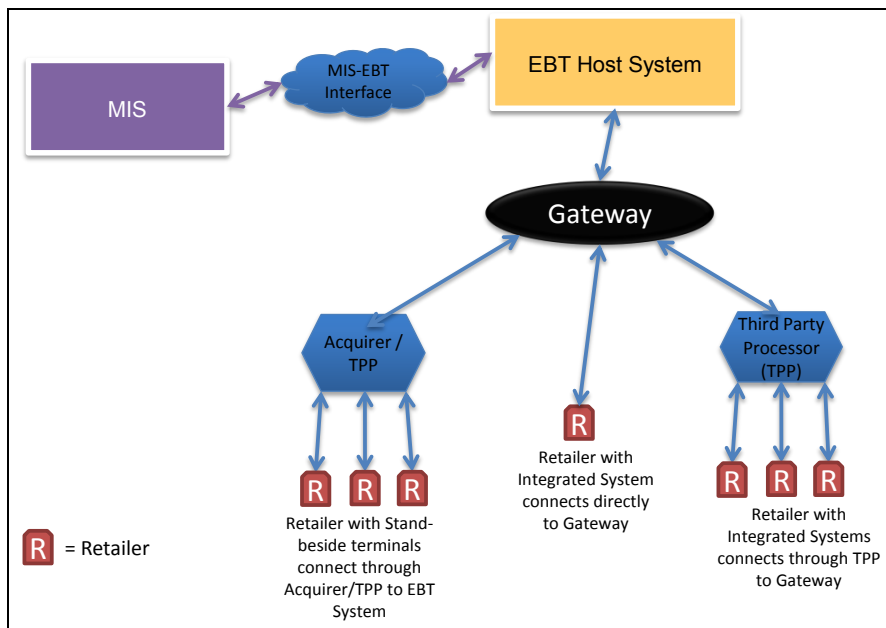
Figure 1: EBT Online Transaction Flow

The second flow that needs to be considered is the Settlement Flow, which is depicted below in *Figure 2: EBT Settlement Flow*. With the implementation of an incentive program by the State, settlement needs to also include funding of any incentive benefits that have been utilized by the cardholder. Funding of the incentive program would be similar to the funding for other EBT benefits funded by the State, which in California includes the California Food Assistance Program (CFAP) and the Work Incentive Nutritional Supplement (WINS) benefits.

Money is moved from the Settlement Account, which is at the State Bank, to the Clearing Account, which is owned by the EBT Processor. The money moved from the Settlement Account will include both federal funded benefits (SNAP) and State funded benefits such as CFAP, WINS, and any future incentive programs. Funds are moved from the Clearing Account to the Gateway Settlement Account and subsequently to the bank accounts of the Acquirers/TPPs and Retailers.

The other function shown in the diagram is reconciliation of benefits. California has a stand-alone system that supports state-wide system reconciliation. This system is Statewide Automated Reconciliation System (SARS). Information flows from the EBT Processor on a daily basis to support the reconciliation of the EBT System. This is described in more detail in Section 2.2.4.
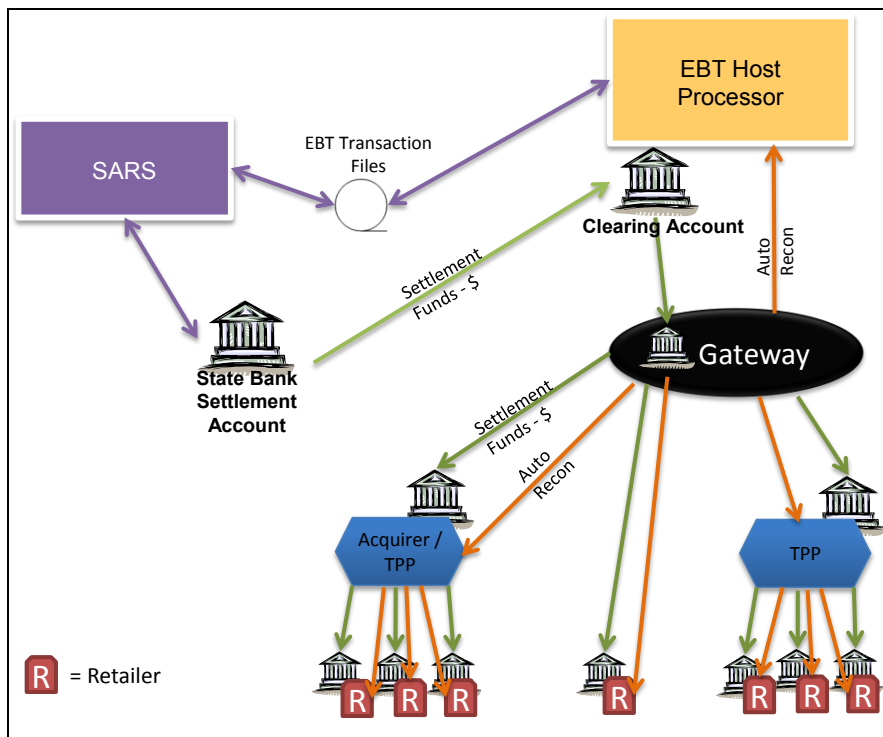
Figure 2: EBT Settlement Flow

2.2 HFI Alternative Based on Massachusetts HIP Model

The Massachusetts Health Incentive Pilot (HIP) program was implemented in Hampden County in Massachusetts in late 2011. SNAP recipients were provided incentive funds in their SNAP account for purchases of fruits and vegetables at participating retailers. The targeted fruits and vegetables included fresh, canned, frozen, and dried fruits and vegetables without added sugars, fats, oils, or salt, with some exclusions such as white potatoes and mature legumes. The EBT Service provider for Massachusetts, Conduent (previously Xerox), modified their EBT system to support the Massachusetts HIP program. Work was also required by the participating retailers to modify their store systems to support the HIP program, and by the Commonwealth of Massachusetts for their backend systems (e.g., transaction data warehouse) supporting EBT.

During the implementation of the HIP program, the X9.58 standard for the interchange of Electronic Benefits Transfer (EBT) Financial Transaction Messages for the Supplemental Nutrition Assistance Program (SNAP) and cash benefit was updated to include support for the HIP (and subsequent incentive) programs. FIS participated in the working committee that developed the updated standard, and subsequently was one of the entities that approved the update.

The transaction requirements contained in the X9.58 standard[1] that for SNAP financial transaction messages (purchases) that includes a healthy incentive purchase consists of the following.

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[1] American National Standard for Financial Services – X9.58-2013, approved June 26, 2013, pages 58-59.

C.8.1 Healthy Incentive Program (HIP)

For the Healthy Incentive Program (HIP), the following processing rules apply:

a) Additional data private, acquirer (bit 111) is not used.

b) Amounts, additional (bit 54), in the Financial Presentment request message (200) shall include the sub-total value of the HIP eligible food items as shown below:

Account type amounts additional, an 2; Value 98 (SNAP)

Amount type code, amounts additional, an 2; value "5S -Healthy Incentive Program (HIP) purchase amount";

Currency code, amounts additional, n 3;

Amount, amounts additional, x + n 12.

c) *Amounts, additional* (bit 54) in the Financial Presentment response message (210) shall include the incentive earned on the current transaction and the month to date total incentive earned as shown below:

1) For the current incentive earned amount:

Account type amounts additional, an 2; Value 98 (SNAP);

Amount type code, amounts additional, an 2; value "5T -Healthy Incentive (HIP) incentive earned";

Currency code, amounts additional, n 3;

Amount, amounts additional, x + n 12.

2) For the month to date incentive earned:

Account type amounts additional, an 2; Value 98 (SNAP);

Amount type code, amounts additional, an 2; value "5U - Healthy Incentive Program (HIP) month to date earned";

These requirements from the X9.58 standard are what FIS, as the EBT processor for California, and California retailers would have to implement to support for the California fresh fruits and vegetables incentive program.

2.2.1 General System Requirements

The high-level system requirements defined for the alternative are:

1) Supplemental Benefits are earned when a customer purchases eligible items (California-grown fruits and vegetables) and pays with SNAP/food stamps.

2) The supplemental benefit is a 1:1 (penny-for-penny) match. For example, if a customer buys $5.32 of CA-grown produce, their supplemental benefit will be $5.32.
   a) The bonus dollars cannot exceed the amount of SNAP spent in the transaction (for example, if a customer buys $10 of CA-grown produce, but pays $5 in SNAP and $5 in cash, the bonus will only be $5).

3) The bonus amount is deposited into the customers general CalFresh account as a supplemental benefit and can be spent on *any* SNAP-eligible items

4) Complete transferability across retailers – Ability to earn supplemental benefits with one retailer and spend them at another (grocers, farmers' markets, any EBT vendor). Phrased another way, a customer can:
   a) Earn supplemental benefits at any retail location that accepts SNAP and sells eligible items.
   b) Spend their supplemental benefit at any retail location that accepts SNAP.

5) Transparency *I* ability to communicate the supplemental benefit
   a) Allows SNAP recipient and social service agency staff to check how many supplemental benefits/bonus dollars they have earned. Allows retailers to communicate account

supplemental benefits earned during a transaction to customers (e.g. on the receipt). This includes functionality to show supplemental benefits earned over time.

6) Limit on how much an EBT customer can earn / day/ week/ month
   a) Gives the state agency the ability to set a cap on the amount of supplemental benefits that can be earned (likely set on a monthly basis, though TBD).
   b) Could be a set dollar amount (e.g. $60/month) or could be a percent of the SNAP allotment provided to the CalFresh household.
7) Variable rates of incentives depending on retailer
   a) Allowing a greater level of incentives (e.g. two-for-1 matching for farmers' markets in order to further incentivize farm-direct purchasing.) depending on USDA FNS SNAP retailer authorization number (or some other retailer identifier).
8) Ability to handle product returns/reimbursements (and deduct supplemental benefits accordingly).

2.2.2 EBT System Enhancements

While the FIS EBT System has the base functionality to support the HFI for California, several enhancements and modifications would still need to be made to the EBT system. In summary, these changes are:

- Support and process the X9.58 transaction messages from retailers that contain HFI purchase data.
- Modify the EBT System to dynamically add HFI funds when qualifying purchases are made.
- Support accurate processing of HFI benefits for purchases, returns, voids, and reversals.
- Support system configuration to allow real-time calculation of the HFI benefits earned by the CalFresh participant based upon their qualifying purchases. System configuration should include:
  - Percentage of incentive earned based upon the qualifying purchase (e.g., 100% incentive payment of the qualifying purchase)
  - Incentive bonus percentage for certain FNS merchant types (e.g., cardholders shopping at FNS retailers with a merchant type of farmers' market receive a 200% HFI bonus on their purchase, and when they shop at a grocery store receive a 100% bonus).
  - Length in time of HFI grant period, with a default to calendar month. This is the length of time for which the maximum HFI amount that can be earned by the cardholder is tracked before being reset at the start of the next period. Default will be a calendar month, although use of calendar weeks (e.g., two weeks) should also be allowed.
  - Maximum incentive allowed for the HFI grant period (e.g., maximum of $60 HFI incentive for the grant period).
- Support segregation within the EBT account of HFI incentives earned during the HFI grant period.
- Support accurate reporting of HFI benefits earned, outstanding, and redeemed on a daily basis.
- Support settlement and reconciliation of the outstanding HFI funds in the EBT System and redeemed by CalFresh participants.
- Support expungement of HFI benefits not utilized by CalFresh participants after a configurable number of days of no account activity in the EBT account (e.g., 180 days of inactivity). Similar to SNAP benefits, expungement of HFI benefits should be on a grant basis.
- Support customer service offerings (e.g., IVR, cardholder portal, helpdesk) for the HFI benefits.

2.2.2.1   HFI Benefit Authorization and Transaction Processing

The FIS EBT System tracks SNAP benefits by grant (authorization) received from the Eligibility System for the household. To determine the SNAP balance available to the cardholder, the EBT system adds up the remaining balances in all of the SNAP authorization grants in the EBT account. Grants are utilized on a first-in, first-out (FIFO) basis, so that the oldest grants are utilized first. However, the participant is only aware of the total SNAP balance available to the household for redemption. Participants never see the

individual grants or the balances remaining on them. To a participant, a grant is a deposit into their EBT account, and the EBT account balance is the total of their SNAP benefits available for purchases.

For the HFI program, processing will be similar. HFI benefits will be maintained in a separate grant created for the respective month, but the SNAP balance that is available to the client will be the sum total of all remaining balances for both the SNAP and HFI grants. Because there are separate grants for HFI, the EBT system can be programmed to provide the participant the balances earned and available from the HFI program through either the cardholder IVR or web portal.

The difference is that HFI benefit grants and SNAP benefit grants is that HFI benefit grants are created dynamically when the cardholder performs a qualifying food purchase. HFI benefit grants are based upon the configurable benefit period for which HFI benefits can be earned. This benefit period will normally be a calendar month, but should be a configurable entry that can be set to other timeframes, such as two weeks. During the HFI benefit timeframe, the EBT system should support determination and allocation of HFI benefits up to the maximum HFI benefit allowed for the period. Once the maximum HFI benefit for the period has been awarded to the cardholder, no additional HFI benefits should be awarded until the start of the new HFI benefit period.

As noted previously, HFI benefits would be added to the cardholder's EBT SNAP account on a real-time basis as the transaction occurs. The flow of the transaction would be similar to the following:

- Cardholder performs a SNAP purchase transaction that includes purchase of qualifying food products. Amount of the qualifying food purchase is contained in the X9.58 message received from the retailer.
- Purchase transaction passes all the normal edits for a SNAP purchase transaction (e.g., authorized retailer, card status is valid, invalid PIN tries not exceeded, valid PIN entered, available SNAP balance is greater than purchase amount).
- System performs look-up for a HFI grant for the account for the current month. If HFI grant is found, it is retrieved. If an HFI grant for the current month is not found, an HFI grant for the current month is created.
- The incentive amount is calculated based upon the qualifying purchase amount and HFI calculation configuration entries. The initial configuration will consist of two entries – percentage of qualifying purchase that will be provided as an incentive and the maximum dollar amount of the incentive to be provided for the month. When the maximum monthly dollar amount of the incentive is reached, the cardholder will not receive any additional HFI benefits on qualifying purchases until new qualifying purchases are made the following month.
- The HFI amount that is calculated based upon the qualifying purchases is added to the HFI grant for the respective month.
- Taken into account the new authorized HFI amount, the remaining SNAP balance following the completion of the transaction is calculated and is passed back in the response message back to the requesting retailer. In addition, the incentive earned on the transaction as well as the total incentive earned for the HFI grant period (e.g., calendar month) is provided in the response message back to the retailer as per the X9.58 specifications.
- Purchase transaction results are logged, including information regarding the amount of the HFI that was created.

HFI grants can be used for authorized SNAP purchases the same as any CalFresh grant for the household. HFI grants should be utilized in a FIFO manner in conjunction with the CalFresh grants. This means that for a given purchase, any CalFresh grant that became active in the EBT account prior to a HFI grant being created would be used first, followed by the HFI grant. If there is a HFI grant from the previous month, it would be used first before the current month's CalFresh grant is utilized.

The EBT System also needs to be able to handle any type of exception conditions regarding the HFI benefit. This would include transaction voids and reversals, and purchase returns that include a qualifying food amount. While processing of these transaction types are similar, there may be some differences in processing based upon transaction timing. Specifically a void is cardholder generated, and will happen immediately following the initial purchase transaction. A reversal is system generated, and while it usually occurs right after the initial purchase transaction, there could be a delay before the reversal is received at the EBT system. A return will usually happen sometime after the original transaction, during which time additional purchase transactions may have occurred. Because of the potential delay in processing either reversals or returns, the HFI balance may no longer be available to accommodate the reduction due to reversal or return of a qualifying purchase amount. In this scenario, the EBT system should reduce the available HFI balance to zero, but not make it go negative. The results of the void, reversal, or purchase return transaction, including the amount of the HFI that was recaptured, should be logged accordingly.

2.2.2.2   Transaction Settlement

Funding of HFI benefits will be different than the funding of SNAP benefits when settling approved purchase transactions. It should be noted that the settlement funding is not visible to the retailers. From their perspective, the retailers are receiving reimbursement for approved SNAP purchase transactions, regardless of how the benefits are funded. But to the State Agency responsible for settlement of SNAP transactions, funding of settlement will be coming from two sources, either from the USDA letter of credit for SNAP or from the funding pool for HFI benefits. The EBT System has to provide an accounting and reporting system that supports the two sources of funds and provides details for settlement funding. Because the HFI funds are maintained in a separate grant, this should not be difficult, and should feed into the existing operational procedures utilized by FIS for settlement. FIS currently has the reporting mechanism in place to support multiple funding sources for settlement, as this is currently required for other benefit programs such as state funded SNAP benefits. The State of California currently has two such programs in place, the California Food Assistance Program (CFAP) and the Work Incentive Nutritional Supplement (WINS) benefit on the FIS EBT System.

2.2.2.3   Reconciliation

The EBT System needs to be able to support reconciliation of the HFI benefits. EBT system reconciliation normally consists of three functions:

- Benefits being added to an EBT account have been properly authorized
- Benefits shown as being utilized (e.g., redeemed) are equal to the amount being paid out to retailers for redemptions
- Outstanding liability for the benefits at the end of the business day is equal to the ending balance from the previous day (beginning balance for the current day) plus new benefits added less benefits redeemed or expunged.

The reconciliation process should already be in place within the FIS EBT system, so will not take any additional software development by FIS to implement.

2.2.2.4   Reporting

There will be reporting changes required to support the new benefit types for the HFI program. Specifically, the Settlement and Reconciliation Reports will need to be updated to show the new HFI benefits that have been authorized and redeemed, and the outstanding liability for HFI benefits that have been authorized but not yet used by the cardholder. It is anticipated that the majority of the changes will be in the system configuration, which does not require new coding, but will require testing and validation by FIS. There will also be some changes required to the Activity Files provided to the State and Counties from the EBT System. While it is assumed that most of the changes again will be in the system

configuration for the EBT System, some programming changes in the creation of the files may be required.

2.2.2.5 Expungement

Expungement is the process by which benefits that are unused and have not been accessed by the cardholder after a configurable number of days are removed from the EBT account and lost to the cardholder. Currently, for SNAP benefits, unused benefits are expunged from the EBT account after 365 days of inactivity in the EBT account. HFI benefits are not required to have the same timeframe as SNAP benefits before they are expunged. The expungement period can be longer or shorter. For example Disaster SNAP (D-SNAP) benefits are typically expunged from the EBT account after 90 days of inactivity on the EBT account.

Within the EBT System, the expungement period is normally a configurable period that is set at the funding (e.g., "Group") level for the benefit. System development should not be required to establish the expungement period for the HFI benefit; however the State will need to determine when inactive HFI benefits should be expunged. Also, policy decisions will need to be made as to notifications to the cardholder that HFI benefits are being expunged and if expunged HFI benefits can be restored to the EBT account if requested by the cardholder.

2.2.2.6 EBT Cardholder Customer Service Offerings

FIS currently provides customer service to EBT cardholders through three offerings:

- IVR
- EBT Cardholder Web Portal
- Live customer service representative (CSR)

All three of these offerings would need to be updated to support the HFI benefit. The biggest changes would be the ability to provide the EBT cardholder the amount of HFI benefits available for use, but transaction history would also need to be modified to show when HFI benefits were earned and when they were used.

2.2.3 Retailer System Enhancements

Enhancements to retailer store systems are dependent on the type of equipment being used by the retailer for EBT transactions. Categories are stores with integrated systems, stores with stand-beside POS devices, and vendors at farmers' markets. Each retailer category is discussed separately.

2.2.3.1 Stores with Integrated Systems

An integrated system is defined as a front-end store system that supports the acceptance of different tender types, such as credit cards or EBT, without the cashier having to manually enter the transaction dollar amount manually into the POS device. In other words, the POS device is integrated with the store front-end transaction scanning system.

In order to support the HFI Benefit program, retailers with integrated front-end store systems need to make the following changes to their systems:

- Recognize which fresh fruits and vegetables within the store California grown fruits and vegetables. This will be done by placing a flag within the product inventory list at the store that the product is a California grown fruit or vegetable. Retailers maintain inventory lists by either Universal Product Code (UPC) or PLU (Price look-up) codes. UPCs identify products first by manufacturer or distributor and then the specific item provided by the manufacturer or distributor, and is used for pre-packaged food items such as a box of cereal or a bag of onions with a fixed weight (e.g., two pound bag of onions). PLU codes are typically used for loose fruits and

vegetables that are sold at a per unit (e.g., head of lettuce at $1.29 each) or weight (e.g., apples at $1.09 per pound) basis.

- Modify their store systems to track the dollar amount of California grown fruits and vegetables within each client transaction. If the tender type for the transaction is SNAP EBT, place the dollar amount of the California grown fresh fruits and vegetables purchases within the appropriate fields in the transaction message going to the EBT processor.
- Depending on the requirement from the State, modify the transaction receipt printed by the Store front-end system to list the amount of California grown fresh fruits and vegetables purchased by the cardholder, and show the incentive earned for the purchase as well as total remaining HFI benefits available for use by the cardholder.

One issue that may occur with integrated stores is produce being purchased that are identified by PLU codes. PLU codes are generic codes that identify a specific food item, e.g., bananas or avocados, but do not identify the source of the product. The two major producers of Haas avocados sold in California are California and Mexico. However, the generic PLU code used for Haas avocados does not identify the source of the avocado. There may be times when a store is carrying avocados from both California and Mexico. A number of other fruits and vegetables will also incur this issue, such as apples, oranges, onions, potatoes. Although this issue can occur with products identified through a UPC, this should be a much smaller issue with packaged fruits and vegetables identified by UPCs, as typically the manufacturer/distributer will identify fruits and vegetables with UPCs by source of the product.

The State will need to determine a policy of how they wish to handle fruits and vegetables within integrated stores that may be grown both in-state and out-of-state.

2.2.3.2   Stores with Stand-beside POS Terminals

For retailers with stand-beside POS terminals, the dollar amount of California grown fruits and vegetables would need to be calculated separately and entered manually into the stand-beside POS device. Similar to how retailers with stand-beside POS terminal are currently responsible for flagging/identifying what products are SNAP eligible, retailers would also become responsible for identifying what fruits and vegetables they sell are California-grown. The specific mechanisms for ensuring program integrity would have to be developed by the state, but could be modeled off of how program integrity is currently maintained for SNAP generally at retailers using stand-beside terminals.

Updating stand-beside POS terminals will require the vendor/provider of the POS terminal to create a software update that contains the new requirements for the HFI program. Retailers using the stand-beside POS terminals would have to load the new software into their POS terminals in order to participate in the HFI program. Because the changes are not that significant, it is expected that the existing POS terminals should have enough processing capacity and memory to support the new requirements for the HFI program.

2.2.3.3   Farmers' Markets

Farmers' markets offer another wrinkle to the HFI program, as it can be assumed that only stand-beside devices will be used at the farmers' market, and the majority of the food items being purchased are California grown fruits and vegetables. However, food items that are not fresh fruits and vegetables, such as fresh baked bread, may be sold at the farmers' market. In addition, it is possible that some fruits and vegetables sold at the farmers' market are not California grown, but have been sourced from out of the state. The terminal used at the farmers' market, which are basically the same type of stand-beside POS terminals as discussed above, will need to be able to accommodate this. Many farmers' markets in California process EBT transaction through a central information booth that then provides CalFresh customers with tokens they use as "scrip" to purchase food from farmer-vendors. The vendors then exchange their scrip for cash at the market information booth. The exact process for entering in the HFI

calculation may depend on the set-up of the market, but should not be much different than the process with other stand-beside terminals.

Similar to the stand-beside POS terminals used by stores, the Farmers' Markets' POS devices will also have to be loaded with updated software that supports the HFI program.

2.2.4 State System Enhancements

The implementation of HFI does not impact the SNAP eligibility system, as the provision and utilization of the HFI benefit occurs outside of the eligibility system and within the EBT System. Where it does impact State and/or County systems is on the back-end for the State or any County that is utilizing activity files coming from the EBT processor (FIS) that contains SNAP EBT account transaction activity data.

California has the Statewide Automated Reconciliation System (SARS), which performs SNAP benefit reconciliation by comparing the benefit activity in the Account Activity File to system reports received from FIS and AMA data entered by CDSS fiscal staff. New transaction types will be added to the daily Account Activity File for HFI benefit issuances and HFI repayments (decrease of the HFI benefits as the result of a food return transaction that includes a HFI Value). SARS will need to be modified to include HFI benefits in statewide food benefit reconciliation and reconcile HFI benefit activity against HFI benefit totals reported by FIS. The changes required for SARS to support the HFI program was derived from the Healthy Incentive Pilot (HIP) Proposal submitted by California Department of Social Services to USDA FNS in 2010.

3 High-level Implementation Estimates

The implementation estimates being provided in this document are high-level swags that are based upon general industry knowledge of how EBT works and how the associated systems (EBT System, retailer systems, and State/County back-end systems) use and process EBT data. The actual implementation estimates, if a decision is made to implement the alternative, will vary based upon a number of considerations, including the technology used for the system, the architecture of the system, and the final design of the system. Consequently the estimates contained in this section should only be used as guidelines that should be considered in looking at the viability of the alternative.

Estimates are broken out by the EBT processor, the State, and retailers. However, an implementation estimate is not provided for the State/County back-end systems, for reasons provided *in Section 3.1.3 - Estimate for State System Enhancements.* .

3.1 Estimate for Implementing the Massachusetts HIP Model

In the sections below, estimates are provided in hours for the selected approach, with a high and low estimate, along with an anticipated estimate for the implementation.

3.1.1 Estimate for EBT System Enhancements

A number of components need to be changed within the EBT System in order to handle the calculation, disbursement, use, settlement, and reconciliation of HFI benefits. In order to provide a better understanding of the impact that a new benefit program would have to the EBT system, the estimate is provided by component, with separate estimates for project management and testing (both system testing and User Acceptance Testing[2]). Estimates are provided in hours, with a high and low estimate, along with an anticipated estimate. The estimated provided are based upon the author's 25 years of experience in developing and modifying EBT Systems.

The estimated hours to update the EBT System to support the approach are shown below in *Table 3: EBT Processor Hour Estimate for Alternative*.

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[2] User Acceptance Testing (UAT) is the process by which the end users of the system, in this case the State of California, performs an end-to-end test of the new functionality being delivered to verify that the new functionality is working the way it is supposed to work, and that existing functionality has not been impacted. Following the success completion of a UAT, the users normally provide a formal sign-off that the new functionality is accepted and ready for production.

Table 3: EBT Processor Hour Estimate for Alternative

Component	---------- Estimate in Hours -------------		
	Low	High	Anticipated
Project Management	420	920	610
System Design (Functional and Detailed Design)	100	300	160
HFI Benefit Authorization and Transaction Processing (includes purchases, balance inquiries, returns, voids and reversals)	400	800	600
Transaction Settlement	100	300	150
Reconciliation	100	300	150
Reporting	100	250	150
Expungement	100	200	150
EBT Cardholder Customer Service Offerings (IVR, CSR, and Cardholder Portal)	500	1000	700
System Testing	400	800	600
User Acceptance Testing	120	240	200
System Documentation Updates	100	200	120
Implementation	80	200	120
Total	2520	5510	3710

Although it is assumed to be minimal, there will also be ongoing operational costs to supporting an HFI program, in particular because of anticipated additional customer support costs (e.g., IVR and CSR) and back-office costs to support settlement and reconciliation of another benefit type. These costs have not been estimated.

3.1.2 Estimate for Retailer System Enhancements

The implementation costs to retailers for the selected approach for the HFI program depends on whether the retailer is integrated or not. For non-integrated retailers, the cost will be the acquisition of a POS terminal that supports the HFI program or an update to the software for existing POS terminals. This is for both POS terminals used at regular retailers and POS terminals used at farmers' markets.

For integrated retailers, the implementation costs consist of updating the store systems to recognize inventory items as being eligible for the HFI program, capturing the total of the HFI eligible items within the purchase transaction, providing the total amount of HFI eligible items in the transaction message going to the EBT processor, processing the message response received from the EBT processor, and formatting the SNAP transaction receipt appropriately to show purchases paid by the HFI, HFI earned on the transaction, and HFI benefits available for the cardholder to redeem. It is also anticipated that Retailers and their TPPs will have to certify their store systems to demonstrate that they are able to process HFI transactions correctly and format the transaction receipt for the cardholder per the published requirements. This is an additional cost to both the retailer and the TPP.

Similar to the estimates for the updates to the EBT System, the estimates contained in Table 4 below for the Retailer systems is broken out by component, and consists of hourly estimates for a low, high, and anticipated development effort.

Table 4: Retailer Hour Estimate per Chain/System for Alternative

Component	---------- Estimate in Hours -------------		
	Low	High	Anticipated
Project Management	220	480	320
Analysis and Design	120	300	200
Add HFI indicator to store product list. Update UI to support setting of HFI indicator on store products.	60	160	80
Modify store system to collect HFI totals by purchase transaction and format totals in transaction message going to EBT Processor	200	400	300
Modify store system to process purchase returns, voids, and reversals for transactions that includes HFI products and purchases.	200	400	300
Modify store system to process return message from EBT processor and format transaction receipt as per requirements	100	300	150
System Testing	120	240	160
Certification of changes with EBT Processor	20	80	40
System Documentation Updates	60	120	80
Deployment and Transition	200	400	300
Total	1,300	2,880	1,930

Retailers typically plan for two releases of the software in their store front-end systems on an annual basis. The enhancements for the HFI program are most likely to just be one of a number of modifications being made to the Store front-end systems. Retailers typically like to have a common code base for their store systems, even if functionality, such as HFI, will initially be implemented in only a few pilot stores. Having a common code base for all stores makes ongoing maintenance and support less costly for the retailer. In addition, as functionality is rolled out to additional stores, implementation only requires turning on the functionality for the new stores. Retailers will typically rollout new releases to stores that required the new functionality in an expedited timeframe, but will phase the new release to the balance of their store locations not needing the new functionality in a controlled manner.

There is also an out-of-pocket cost for the retailer or their TPP to certify any new changes in message formats, in this case the HFI benefit, with the EBT processor. This cost is estimated at $300/hour for certifying the interface, with an average of 10 hours being required per retail chain.

It should be noted that the hourly estimate is by retailer chain. So costs should be implemented by the number of retailer chains that will be implementing the HFI product. However, for mid-size chains that use a common reseller, development and testing cost per chain would be lower. It is not unusual for many of the independent chains to use the same reseller for their store front-end systems.

Again, the estimates do not include ongoing operational costs for the retailer. These costs will vary by retailer based upon the type of store, number of inventory products carried, and the amount of change in the retailer's product mix. Specifically, as products are updated on the stores product inventory list, the indicator will need to be marked is the product is HFI eligible.

3.1.3 Estimate for State Costs for HFI Implementation

The State EBT Office will have to expend time and effort to implement the HFI program. This effort will include:

- Project management;
- Review and approval of HFI document deliverables from the EBT Processor;
- Testing the enhancements made by the EBT processor to support the HFI program,
- Outreach to the counties on the HFI program; and
- Outreach and coordination with the retailers on the HFI program and the changes required to their store systems to support the program.

State implementation support for the HFI program is expected to be a combination of existing and new State EBT staff and contractors. HFI implementation support performed by existing State staff is not an out-of-pocket cost to the State, as the State would continue to pay for these staff whether or not they work on the HFI implementation. Out-of-pocket costs to the State would be the additional staff required to support the HFI implementation. Additional personnel the State is expected to require to implement the HFI program are:

- State Project Manager (30 months)
- Retailer Coordinator (26 months)
- Local Agency Coordinator (28 months)
- Quality Assurance (QA) Consultant (24 months)

The additional staff making up the State implementation team would be expected to be on the project throughout the implementation process, and part of the team would continue to provide support following the start of state-wide system operations. The reason for keeping the team on following the completion of state-wide rollout is to assist with any implementation or operational issues that may occur and to provide a smooth turn-over to State EBT staff at the conclusion of the project. Assuming an 18 month implementation period, six month rollout, and six months of operational support, the contracted State HFI implementation team would be on the project a maximum of 30 months. The out-of-pocket cost to the State would be the cost for the State HFI implementation team for up to 30 months.

3.1.4 Estimate for State System Enhancements

The State EBT Office, which is part of Office of System Integration (OSI), utilizes an automated system, the Statewide Automated Reconciliation System (SARS), for State and county reporting and system reconciliation. SARS, which is managed by the Office of System Integration (OSI), has a dedicated team supporting the application. SARS is a web-based application that allows county and state fiscal staff to audit EBT funds movement between their eligibility system and the EBT Processor's system. SARS provides a state–controlled, independent audit of welfare benefits, above and beyond what is provided by the EBT Processor. SARS employs automated validation processes to ensure data is accurate on a daily basis. In addition to being the independent reconciliation system, SARS is also the archive repository for files and reports generated by the EBT Processor's System. SARS performs SNAP benefit reconciliation by comparing the benefit activity in the Account Activity File to system reports received from FIS and AMA data entered by CDSS fiscal staff.

In the Healthy Incentive Pilot (HIP) Proposal submitted by California Department of Social Services to USDA FNS in 2010, there was discussion of the changes required in SARS to support HIP, although no cost estimate for the changes was provided in the proposal. The changes to SARS that was documented in the 2010 HIP Proposal included:

- Configure new HIP benefit type.
- Add a new table with HIP group identifiers for cases in the Pilot Site.

- Add a new table for enhanced activity-file data.
- Load HIP identifiers, HIP transactions, and HIP data contained in enhanced account activity and administrative activity files.
- Reconcile HIP transactions.
- Allow users to view HIP reconciliations, HIP statistics and case level HIP details.

Changes that would be required to SARS for the HFI Program are expected to be very similar, if not identical, to the SARS changes detailed in the 2010 HIP Proposal. In the 2010 HIP Proposal, there was not an out-of-pocket cost listed for the changes to SARS to support the HIP project. Instead, it was implied that existing SARS support staff would be able to make the required changes. For the HFI Program, we are making the same assumption that existing SARS support staff would be able to make the required changes to SARS to support the HFI program.

3.1.5 Cost Estimate for EBT System Enhancements

In the following table, the estimated costs for the EBT system enhancements for the alternative have been provided using an hourly rate of $100.

Table 5: Cost Estimate for EBT System Enhancements

	---------- Estimate in Hours ------------			---------- Estimate in Dollars ------------		
	Low	**High**	**Anticipated**	**Low**	**High**	**Anticipated**
MA HIP Model	2520	5510	3710	$252,000	$551,000	$371,000

3.1.6 Cost Estimate for Retailer System Enhancements

In the following table, the estimated costs for the retailer system enhancements for the alternative have been provided using an hourly rate of $100.

Table 6: Cost Estimate for Retailer System Enhancements

	---------- Estimate in Hours ------------			---------- Estimate in Dollars ------------		
	Low	**High**	**Anticipated**	**Low**	**High**	**Anticipated**
MA HIP Model	1,300	2,880	1,930	$130,000	$288,000	$193,000

4 Replicability of the HFI Program

This section discussed the replicability of the HFI program with other States using FIS for SNAP EBT processing, along with the advantages and disadvantages of the selected alternative.

4.1 Advantages/Disadvantages of the Models

The model being analyzed for implementation for the Healthy Food Incentive program is intended to reward desired behavior, in this case the purchase of fruits and vegetables, by providing additional SNAP benefits to the cardholder. The advantage of a model similar to the Massachusetts HIP project is that it is relatively easy for both the EBT processors and retailers to implement. It rewards desired behavior from the cardholder. However, it does not impose a restriction as to how the additional benefits may be used. From a behavioral aspect, it is very easy for the cardholder to understand. It provides a benefit that can be used for any food item, thus allowing the cardholder to get more value for their benefits through minor changes in their behavior. For both the EBT processor and the retailer, it is easier to implement and to maintain. There is less complexity in the incentive program, which reduces the operational costs (e.g., less calls to the customer help desk/IVR).

The following table provides a summary of the advantages and disadvantages for the selected alternative.

Table 7: Advantages & Disadvantages of Alternative

Advantages	Disadvantages
Selected Alternative - Massachusetts HIP Model	
Easy for cardholders to understand	As earned incentives can be used for any SNAP eligible food, program may not be considered as strong as other alternatives in supporting program objectives and modifying client behavior
Relatively easier to implement for EBT processor and retailers than other alternatives	
Relatively easier to support operationally than other suggested alternatives	

The recommendation is to implement an incentive program that similar to the Massachusetts HIP Model. Main reason for this recommendation is this approach is not that complicated and should be easier to implement than other proposed alternatives. An evaluation as to whether any additional health benefits from other alternatives outweighed the technical/operational drawbacks was outside the scope of this analysis.

4.2 Costs to Implement HFI in Other States

Assuming that other States wishing to implement an HFI program have the same basic requirements for the HFI program as California, there will be no additional development costs to the other States. However, there will be implementation costs to the States, specifically for configuring their EBT Systems to support an HFI program. The system components that would require configuration changes to support an HFI program are:

- **SNAP purchase transaction processing rules**. The EBT System for the State would have to be configured to look for additional fields in the incoming transaction purchase transaction and process them accordingly.
- **Settlement and Reconciliation**. The EBT System needs to be updated to account for the new source of funding for the HFI benefit, and have the processes in place for settlement and reconciliation.
- **Reporting**. New and existing reports will need to be configured to support the HFI benefits.
- **Expungement**. EBT System will need to be configured to support the expungement of unused HFI benefits. Expungement rules can be customized by State.
- **Cardholder Customer Service**. IVR scripts and the Cardholder Web Portal will need to be updated to support the HFI benefits. Information will need to be provided to CSRs so that they are aware of the HFI benefits.

As noted previously, it is not anticipated that any development work will be required to implement an incentive program for another State. The majority of the work will be project management, configuring the system configuration, setting up the new processes for the HFI benefits, and testing. There will also have to be outreach to the SNAP retailers in the State to inform them of the new program and the requirements for supporting the program. For large retailers that are in multiple States, such as Kroger or Walmart, this will be relatively straight forward. Issue will be with small to medium size retailers that are integrated. Their store front-end systems will need to be updated to support the HFI program, and store systems will need to be certified with the EBT processor, FIS.

The cost to a State that wishes to implement the HFI program using the California model is estimated to be between 400 – 800 hours, depending on the specific requirements from the State and the amount of testing the in which the State wants to be involved before implementation.

4.3 Incentives to be Standard Functionality in EBT

The question is whether the HFI functionality would become standard functionality for future States once it is developed and implanted in California. The answer is yes, it would become standard functionality that future States could use. EBT processors are always looking for ways to distinguish and separate themselves from their competition. The ability to support an incentive program as a standard offering would be one way for FIS to do so.

4.4 Cost of Implementation for Multiple States

When considering implementation costs for multiple States implementing the same program, two factors need to be considered. The first is the actual development cost of the enhancement. The cost of developing the enhancement should not change whether it is one or ten States that are implementing the enhancement. So if ten States decide to share equally in the development of a new enhancement, each would only pay 10% of the total development cost, as opposed to having to pay the entire development cost on their own.

The second factor is the actual implementation cost within each States' EBT System. Implementation cost is not a shared cost between States, as each State's EBT System is configured uniquely for that State, and each State has unique requirements for customer service, settlement, reconciliation, and reporting. Also impacting the cost of implementation will be the level of participation of the State in the implementation process (e.g., does the State require a formal UAT and sign-off on the enhancement before it is implemented) and the size of the State. Larger States with more retailers are inherently more complex and require greater level of support and project management. In other words, the cost of implementing an HFI program in California is expected to be more costly than implementing the HFI program in a smaller state such as Nevada.

Appendix 1 – SNAP Business Types Codes

Table 8: SNAP Business Types Codes

Business Type Code	Description	Store or Meal Service
AD	Drug and/or Alcohol Treatment Program	Meal Service
BB	Bakery Specialty	Store
BC	Non-profit Food Buying Co-op	Store
BW	Shelter for Battered Women and Children	Meal Service
CA	Community Supported Agriculture Organization	Store
CD	Communal Dining Facility	Meal Service
CO	Combination Grocery/Other	Store
CS	Convenience Store	Store
DR	Delivery Route	Store
DF	Direct Marketing Farmer	Store
FM	Farmers' Market	Store
FV	Fruits/Vegetable Specialty	Store
GL	Group Living Arrangement	Meal Service
HP	Homeless Meal Provider	Meal Service
IR	Internet Retailer	Store
LG	Large Grocery Store	Store
MC	Military Commissary	Store
MD	Meal Delivery Service	Meal Service
ME	Meat/Poultry Specialty	Store
MG	Medium Grocery Store	Store
RE	Private Restaurant/Meal Delivery	Meal Service
SC	Senior Citizens' Center/Residential Building	Meal Service
SE	Seafood Specialty	Store
SG	Small Grocery Store	Store
SM	Supermarket	Store
SS	Super Store	Store
WH	Wholesaler	Store

Appendix 2 – Farmers' Market Bonus Dollars

Farmers' Markets have used different alternatives to support SNAP EBT transactions in addition to providing POS equipment to sellers at the markets. A reason for this is that POS equipment is expensive, and there are often not the transaction volumes to justify equipping multiple sellers with POS equipment. One approach is the use of a token system at a Farmers' Market to support the purchase of fresh fruits and vegetables using SNAP benefits. The token system allows a SNAP recipient use their EBT card to purchase tokens in specific denominations. The tokens are accepted by the sellers as currency for purchasing fresh fruits and vegetables. At the end of the selling day for the Farmers' Market, the sellers can exchange the tokens they have taken in as payment at the office for the Farmers' Market for cash payment. In addition, if a SNAP recipient does not use all their tokens, they can return the unused tokens at the Farmers' Market Office and receive a credit back to their EBT account for the unused tokens.

The question has been raised as to whether a Farmers' Market that has implemented a token system for supporting the purchase of fresh fruits and vegetables with SNAP benefits can also participate in the Healthy Food Incentive Program. We believe that this is possible with some minor changes to the processing of SNAP transactions at the Farmers' Market.

There has also been some discussion as to whether the HFI benefits can immediately be provided to the SNAP recipient so they can use their HFI benefit as well as their regular SNAP benefits while at the Farmers' Market. This scenario is also possible. The process is a derivative of the design for the HFI program described above, where the EBT cardholder receives an incentive for the purchase of any California grown fresh fruits and vegetables. The difference is that the EBT cardholder receives their incentive immediately in the form of tokens that they can use at any of the sellers in the market.

Changes to the EBT System would be the same as the changes defined previously in *Section 2.2.2 – EBT System Enhancements* in this document, with the following additions.

1. The Farmers' Market that is participating in the HFI program using tokens would have to be identified as such to the EBT System by retailer ID. All transactions occurring at this specifically identified Farmers' Market would always be assumed to be purchases of California fresh fruits and vegetables.
2. Processing at the EBT System would be modified for any SNAP purchase transactions from a participating Farmers' Market to immediately determine the amount of incentive earned by the EBT cardholder, and to add the incentive amount to the "Amount, Transaction" (bit 4) field in the X9.58 response back to the terminal. The original amount of the purchase would also have to be included in the "Amounts, Additional" (bit 54) of the response.
3. The POS terminal used by the Farmers' Market to conduct the purchase transaction would have to be programmed to correctly process the response from the EBT System. The transaction receipt would have to be modified to show the original transaction amount being requested, the HFI bonus that was earned, and the total in tokens (sum of the original request amount plus any HFI bonus) to be provided to the EBT cardholder for use at the Farmers' Market.
4. If the EBT cardholder does not use all of their tokens, and wants to return unused tokens at the Farmers' Market Office, the EBT System will have to correctly determine the amount of the unused tokens that is attributable to the HFI bonus, and not refund that amount back to the cardholder's EBT account. The amount that is actually refunded to the EBT account is only the unused portion of the original SNAP purchase request.

The rest of the processing follows the rules defined previously in *Section 2.2.2– EBT System Enhancements.* HFI incentives are capped at the preconfigured amount for the incentive period. So if the cardholder has already received their maximum HFI bonus for the incentive period, the cardholder would not get any additional HFI bonus until the next incentive period.

It should be noted that in one respect, use of tokens simplifies the accounting for the HFI bonus, as the bonus is used immediately as it is earned. Under this scenario, HFI bonus dollars will never cross incentive periods, and will always be used. So there will be no need to worry about the expungement of unused HFI bonus dollars.